Bandwidth IG's Modern Dark Fiber Network Enables Cutting-Edge Technology

CASE STUDY: AI Application Drives the Need for Specialized Data Center Deployment

Background

A large enterprise client wanted to deploy AI/Machine Learning applications to make their business more efficient. The client needed to decide between expanding in their current colocation space or placing their AI infrastructure in another facility optimized for high-density servers and tethering back to their main colocation site.

AI Infrastructure

The amount of data feeding AI systems can easily reach petabyte scale and those data flows are not always predictable. What's more, the hardware needed to support the required data processing and analytics uses up to 1kW of power per RU and creates much more heat than typical CPU servers. As a result, this client needed superior infrastructure in terms of both the specific data center environment and network capacities.

Solution

With the amount of power density required for this application, expanding within the client's existing data center would have meant subscribing to far more space than what was truly needed. As a result, this client chose to keep their mainstream IT servers at their existing data center and deploy their new AI infrastructure at **Colovore**'s Santa Clara location where they utilize a liquid-cooled cabinet providing in excess of 35kW of power. They can pack their racks full top-to-bottom and optimize their AI application performance.

In order to support the enormous data feeds, **Bandwidth IG** was selected to provide multiple dark fiber strands between their two sites, which the client is lighting with 'small form-factor pluggable' (SFP) transceivers. SFP's are substantially less expensive than the typical optical hardware, consume a fraction of the power and given the quality of the Bandwidth IG fiber cable, can comfortably transmit 100 Gbps over 40 kilometers at 1550 nm – well within the customer's specifications.

In the final analysis, the option this client chose provides their business with the necessary power and cooling environment to support and grow their AI applications along with the unlimited bandwidth needed to scale efficiently and cost effectively.

About Bandwidth IG

Bandwidth Infrastructure Group (Bandwidth IG) is a metro dark fiber provider that offers high capacity, strategic, dark fiber networks to mission critical data centers, hyperscalers and enterprises throughout the San Francisco Bay Area, Greater Atlanta and Greater Portland. Bandwidth IG's 100% underground network meets critical data needs for enterprises and data centers who require quality, reliable connectivity options. Bandwidth IG's San Francisco Bay Area network offers more than 160 route miles and 289,000 fiber miles, the Greater Atlanta network has more than 50 route miles and 93,000 fiber miles and the Greater Portland, network has more than 12 route miles and 21,000 fiber miles. Bandwidth IG was founded in 2019 and is headquartered in San Jose, California. Visit **www.BandwidthIG.com** to learn more.